

which are chemically resistant to hydrogen fluoride, namely nickel, cobalt, copper, silver, gold, platinum, iridium, tantalum, molybdenum and alloys, compounds and mixtures of these, by electrochemical or chemical deposition from aqueous solutions, electrolysis of melts or physical and chemical vapor deposition.

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67. (Twice Amended) Multilayer coating made from alternating layers of tungsten and layers containing tungsten carbide in accordance with claim 1.

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68. (Amended) Multilayer coating made from alternating layers of tungsten and layers containing tungsten carbide in accordance with claim 7.

69. (Twice Amended) Multilayer coating in accordance with claim 67, characterized in that the thickness of its individual layers ranges from 2 to 10 µm and the ratio of the thicknesses of the alternating layers ranges from 1:1 to 1:5.

70. (Twice Amended) Process for the deposition of multilayer coatings on substrates, preferably on construction materials and items made from them, consisting of alternating layers of tungsten and layers containing tungsten carbide or mixtures of tungsten carbides with each other, with tungsten or with free carbon, said process to include the following stages:

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- (a) placing the substrate in a chemical vapor deposition reactor;
 - (b) evacuating the reactor;
 - (c) heating the said substrate;
 - (d) supplying tungsten hexafluoride and hydrogen to the reactor;
 - (e) retaining the substrate in the said gaseous medium for the time interval necessary for the formation of the tungsten layer on the substrate;
 - (f) in addition to the said tungsten hexafluoride and hydrogen, supplying a previously thermally activated carbon-containing gas to the reactor;

(g) retaining the substrate in the gaseous medium formed at stage (f) for the time necessary for the formation of the outer layer containing tungsten carbide or mixtures of tungsten carbides with each other, with tungsten and with free carbon; stages (d) to (g) are repeated several times in order to form alternating layers of tungsten and layers containing tungsten carbides.

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5 72. (Twice Amended) Process in accordance with claim 70, characterized in that, before the application of a coating to materials or items made from materials selected from a group including iron, carbon steels, stainless steels, cast irons, titanium alloys and hard alloys (cemented carbide) containing titanium, a coating is applied to them consisting of materials which are chemically resistant to hydrogen fluoride, namely nickel, cobalt, copper, silver, gold, platinum, iridium, tantalum, molybdenum and alloys, compounds and mixtures of these, by electrochemical or chemical deposition from aqueous solutions, electrolysis of melts or physical and chemical vapor deposition.

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76. (Amended) Construction material comprising a substrate and a multilayer coating consisting of alternating layers of tungsten and layers containing tungsten carbide alloyed with fluorine in amounts ranging from 0.0005 to 0.5 wt% and possibly with fluorocarbon compositions with carbon content up to 15 wt% and fluorine content up to 0.5 wt%.

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5 81. (Amended) Construction material comprising a substrate and a multilayer coating consisting of alternating layers of tungsten and layers containing a mixture of at least two tungsten carbides alloyed with fluorine in amounts ranging from 0.0005 to 0.5 wt% and possibly with fluorocarbon compositions with carbon content up to 15 wt% and fluoride content up to 0.5 wt%.